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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,287

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Shinya Mizone

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WENDEROTH, LIND & PONACK L.L.P.

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EXAMINER

HAUTH, GALEN H

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,287	<b>Applicant(s)</b> MIZONE ET AL.	
	<b>Examiner</b> GALEN HAUTH	<b>Art Unit</b> 4111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 5-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/11/2006</u> .                                              | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group 1, claim(s) 1-4, drawn to an ink composition.

Group 2, claim(s) 5-8, drawn to a method for making the ink composition.

Group 3, claim(s) 9 and 10, drawn to a method for using the ink composition.

2. The inventions listed as Groups 1-3 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature of groups 1-3 is an ink comprising particles of ammonium acrylate aggregated to phenol resin containing particles in a dispersion medium. The common technical feature was found to not define over the prior art *a posteriori* in view of Nguyen et al. (PN 4530961, col 1 ln 1-19, and col 3 ln 24-26). Due to the lack of a common **special** technical feature the three groups are subject to restriction.

3. During a telephone conversation with Matthew Jacob on 06/30/2008 a provisional election was made without traverse to prosecute the invention of group 1, claims 1-4. Affirmation of this election must be made by applicant in replying to this Office action. Claims 5-10 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

5. The examiner has required restriction between product and process claims.

Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Nguyen et al. (PN 4530961).

a. Nguyen teaches forming an ink composition from ammonium acrylate grafted to carbon black in suspension (col 1 ln 5-19) in a dispersion medium (col 3 ln 6) in which the carbon black contains phenolic functional groups (col 3 ln 20-25, Because the carbon black contains phenolic functional groups and is an organic material insoluble in water it is considered by the examiner to be a phenolic resin). The product taught by Nguyen possesses the micelle structure in that the hydrophobic carbon black particle in the center has grafted chains of hydrosoluble ammonium polyacrylate around the carbon black resulting in a dispersion of the grafted molecules.

b. With regards to claim 2, Nguyen teaches that the dispersion medium is water (col 3 ln 6-10).

8. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Winnik et al. (PN 5145518).

a. With regards to claim 1, Winnik teaches forming an ink composition where copolymers form micelle structures around dye molecules dispersed in an

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aqueous liquid vehicle (abstract). Winnik teaches using acrylic acid (col 9 ln 37-38, monocarboxylic acids such as acrylates reads on acrylic acid) with ammonium ions present (col 10 ln 55) which produces the same final product as ammonium acrylate in water. Winnik teaches that the dye molecules contain a phenol group (col 11 ln 58, triphenodioxazine).

b. With regards to claim 2, Winnik teaches that the dispersion medium is water (col 7 ln 17-18).

c. With regards to claim 3, Winnik teaches using a pH of 8 (col 7 ln 10).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al. (PN 4530961) as applied to claim 1 above.

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a. With regards to claim 3, Nguyen as applied to claim 1 above teaches that the pH of the ink is between about 5 and 9 (col 2 ln 61-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a pH of between 6.5 and 8.5 in process optimization as this range falls completely within the working range of the prior art.

b. With regards to claim 4, Nguyen as applied to claim 1 above teaches that the carbon black is from about 1 to 15% by weight (col 2 ln 27-28, the carbon black of Nguyen is the phenolic resin, so by having carbon black at 1 to 15% teaches having a phenolic resin at 1 to 15% due to the phenolic functional groups present on the carbon black). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a solid phenol resin content of 1 to 14% in process optimization as the upper bound falls within the prior art range and the lower bound is identical. Nguyen teaches that the amount of ammonium acrylate used is 0.01 mole-equivalent to 0.5 mole equivalent per gram of carbon black (col 5 ln 17-20, this results in a range of 0.01 – 65 wt % depending on the amount of carbon black used). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use 2 to 4 wt. % ammonium acrylate in the optimization of the process dependent on the final product desired as this range lies completely within the taught working range.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winnik et al. (PN 5145518) as applied to claim 1 above.

a. With regards to claim 4, Winnik teaches using a solid content of 1 to 10% (col 10 ln 62-63, the solid is the phenol resin) and using an acrylate content of 0.05 to 5 % (col 10 ln 48-52). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an acrylate content of 2 to 4 wt. % in optimization of the process.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GALEN HAUTH whose telephone number is (571)270-5516. The examiner can normally be reached on Monday to Thursday 7:30am-5:00pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam Yao can be reached on (571)272-1224. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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/GHH/

/Sam Chuan C. Yao/  
Supervisory Patent Examiner, Art Unit 4111